

IN THE CLAIMS

1.-10. (Cancelled)

11. (Currently Amended) A semiconductor die comprising:
a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;
a second planar surface opposite the first planar surface;
one or more planar perimeter side surfaces in the second region, each planar perimeter side surface extending from the first planar surface to the second planar surface;
and
each planar perimeter side surface of the semiconductor die being a ~~polished~~ surface substantially perpendicular to the first planar surface, having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction with a top portion of each individual planar perimeter side surface disposed in the second region and within approximately 5 microns of an edge of the first region.

12. (Original) The semiconductor die as recited in claim 11, wherein each planar perimeter side surface is transverse to the first planar surface and the second planar surface.

13. (Original) The semiconductor die as recited in claim 11, wherein the semiconductor die has a substantially rectangular shape.

14. (Original) The semiconductor die as recited in claim 11, wherein each planar perimeter surface is a ground surface.

15. (Currently Amended) A semiconductor die comprising:
a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;
a second planar surface opposite the first planar surface;

one or more planar perimeter side surfaces in the second region, at least one of the planar perimeter side surfaces extending from the first planar surface to the second planar surface, the entire at least one perimeter side surface having a polished surface substantially perpendicular to the first planar surface, having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction with a top portion of each individual planar perimeter side surface disposed in the second region and within approximately 5 microns of an edge of the first region.

16. (Original) The semiconductor die as recited in claim 15, wherein each planar perimeter side surface is transverse to the first planar surface and the second planar surface.

17. (Original) The semiconductor die as recited in claim 15, wherein each planar perimeter side surface comprises a polished surface.

18. (Currently Amended) A semiconductor die comprising:

a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;

a second planar surface opposite the first planar surface;

one or more perimeter side surfaces in the second region extending between the first planar surface and the second planar surface; and

at least one perimeter side surface having at least two offset planar surfaces, where the at least two offset planar surfaces are substantially parallel to each other and with a top portion of an upper one of the one or more perimeter side surfaces disposed in the second region and within approximately 5 microns of an edge of the first region having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction.

19. (Original) The semiconductor die as recited in claim 18, wherein the semiconductor die comprises a rectangular die.

20. (Original) The semiconductor die as recited in claim 18, wherein each perimeter side surface has offset planar surfaces.

21. (Original) The semiconductor die as recited in claim 18, wherein the at least two offset planar surfaces are transverse to the first planar surface and the second planar surface.

22. (Currently Amended) A semiconductor die comprising:

a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;

a second planar surface opposite the first planar surface;

one or more perimeter sides disposed in the second region; and

at least one of the perimeter sides having at least two offset planar surfaces that are substantially parallel to each other and with a top portion of an upper one of the one or more perimeter sides disposed in the second region and within approximately 5 microns of an edge of the first region having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction.

23. (Previously Presented) The semiconductor die as recited in claim 22, wherein each of the two offset planar surfaces is transverse to the first planar surface and the second planar surface.

24. (Previously Presented) The semiconductor die as recited in claim 22, wherein at least one of the two offset planar surfaces extends from at least one of the first planar surface and the second planar surface.

25. (Currently Amended) A semiconductor die comprising:

a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;

a second planar surface opposite the first planar surface;

one or more perimeter sides disposed in the second region extending between the first planar surface and the second planar surface;

each perimeter side having offset perimeter planar surfaces, where the offset perimeter planar surfaces are substantially parallel to each other with one of the offset perimeter planar surfaces extending from the first planar surface and another of the offset perimeter planar surfaces extending from the second planar surface, and each of the offset perimeter planar surfaces is a polished surface with a top portion of an upper one of the offset planar perimeter surfaces disposed in the second region and within approximately 5 microns of an edge of the first region having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction.

26.-34. (Cancelled)

35. (Currently Amended) A semiconductor die comprising:

a substrate having a first planar surface having a first region with active circuitry thereon surrounded by an unused buffer area second region;

a second planar surface opposite the first planar surface;

one or more perimeter sides disposed in the second region extending between the first planar surface and the second planar surface; and

at least one perimeter side having two or more offset planar perimeter surfaces, each of the two or more offset planar perimeter surfaces being polished surfaces, with one of the offset perimeter planar surfaces extending from the first planar surface disposed in the second region and within approximately 5 microns of an edge of the first region and another of the offset perimeter planar surfaces extending from the second planar surface having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction.

36. (Original) The semiconductor die as recited in claim 35, wherein each of the two or more offset planar perimeter surfaces is transverse to the first planar surface and the second planar surface .

37. (Original) The semiconductor die as recited in claim 35, wherein the semiconductor die has a substantially rectangular shape.

38. (Original) The semiconductor die as recited in claim 35, wherein the two or more offset planar perimeter surfaces are parallel.

39. (Original) The semiconductor die as recited in claim 35, wherein each of the two or more offset planar perimeter surfaces are polished surfaces.

40. (Canceled)

41. (Currently Amended) A semiconductor die comprising:

a substrate having a first planar surface having a first region with active circuitry thereon and an unused buffer area second region;

a second planar surface opposite the first planar surface;

one or more perimeter edges disposed in the second region transverse to and extending between the first planar surface and the second planar surface; and

at least one perimeter edge having two or more offset planar surfaces, where the offset planar surfaces are substantially transverse to the first planar surface or the second planar surface with one of the offset planar surfaces extending from the first planar surface and the other of the offset planar surfaces extending from the second planar surface; and

each offset planar surface having a polished surface with a top portion of an upper one of the offset planar perimeter surfaces disposed in the second region and within approximately 5 microns of an edge of the first region having a lateral portion of the second region removed by a smoothing material removal process from the lateral direction.

42. (Original) The semiconductor die as recited in claim 41, wherein the semiconductor die comprises a rectangular die.

43. (Previously Presented) The semiconductor die as recited in claim 41, wherein each perimeter edge includes offset planar surfaces that are substantially parallel to one another, each of the offset planar surfaces on each perimeter edge are substantially transverse to the first planar

surface and the second planar surface with one of the offset planar surfaces extending from the first planar surface and the other of the offset planar surfaces extending from the second planar surface.